# U.S. ENVIRONMENTAL PROTECTION AGENCY—REGION 5
# CHICAGO REGIONAL LABORATORY
# ANALYTICAL REQUEST FORM

This analytical request form should be completed before sending samples to CRL for analysis. The requester should complete all relevant fields and email the form and electronic copy of the quality assurance project plan (QAPP) and/or sampling plan to the CRL Sample Coordinator Rob Thompson (Thompson.robert@epa.gov).

## GENERAL PROJECT INFORMATION

| | | | |
|---|---|---|---|
| **Requester:** | Cheryl Burdett | **Request Date:** | April 10, 2018 |
| **Title:** | CAFO Program Manager | **Division/Office:** | WD/WECAB |
| **Address:** | 77 West Jackson Chicago, Illinois | | |
| **Phone:** | 312-886-1463 | **E-mail:** | burdett.cheryl@epa.gov |

☐ **One-time** or ☐ **Continuous request** (*check one*)

A continuous request is defined as a standing request for the same analytical service (analyses and sample matrices) that may span several sites/projects/sampling events. Please note that submission of this analytical request form is only required once for a continuous request. However, QAPPs and/or sampling plans should still be submitted for every site/project.

| | |
|---|---|
| **Site Name and Location:** | Central Sands Nekoosa, WI |
| **Expected Arrival Date at CRL:** | May 1, May 2, May 3, May 4, May 5 |
| **Turnaround Time Requested** (*standard TAT is 45 days*): | 30 days |

## CRL ANALYTICAL SERVICES

### Disclaimer:

The effective versions of all Standard Operating Procedures (SOPs) are available in pdf format on the R5 Intranet. By submitting an analytical request form, the requestor is implying consent for the use of the appropriate effective SOPs. It is the responsibility of the requester to check the intranet for SOP deviations (known at CRL as Pen&Ink changes) and version updates. Should the CRL suspect that an SOP deviation affect the data, the CRL Sample Coordinator will contact the requester via email or phone to obtain a Pen&Ink consent. As defined by CRL, SOP deviations "affect the data" when there is a change in the laboratory's ability to identify or quantify the analytes in the SOP or when there is a deviation in the regulatory method.

### Form Instructions:

1. In the table below, select the appropriate checkbox to request an analysis and enter the proposed number of samples of each matrix type. An analysis is not currently available for a matrix where the box is shaded.

2. For other/waste, briefly describe the matrix in the space provided. Additional space for a detailed matrix description is available at the end of the table, if needed.

3. For multi-analyte tests, list specific classes/subsets (e.g., PAHs, RCRA metals, etc.) in the space given at the end of this table, if requested.

## General Chemistry

| Analysis Request | | Sample Matrix and Number | | |
|---|---|---|---|---|
| **Analysis** | **Check to Request** | **soil/sediment** | **water/liquid** | **other/waste*** |
| acidity | ☐ | | ____ | ____ |
| alkalinity | ☐ | | ____ | ____ |
| ammonia-N | ☐ | ____ | 150 | ____ |
| anions** | ☐ | ____ | 150 | ____ |
| biochemical oxygen demand-5 day (BOD) | ☐ | | 150 | ____ |
| carbonaceous BOD-5 day (CBOD) | ☐ | | 150 | ____ |
| corrosivity by pH | ☐ | | ____ | ____ |
| cyanide, amenable to chlorination | ☐ | | ____ | ____ |
| cyanide, total | ☐ | ____ | ____ | ____ |
| dissolved organic carbon (DOC) | ☐ | | ____ | ____ |
| fluoride | ☐ | ____ | ____ | ____ |
| grain size | ☐ | ____ | | ____ |
| ignitability by flashpoint | ☐ | | ____ | ____ |
| nitrate-nitrite-N | ☐ | | 150 | ____ |
| paint filter liquid test | ☐ | | ____ | ____ |
| pH | ☐ | ____ | ____ | ____ |
| residue, filterable (TDS) | ☐ | | ____ | ____ |
| residue, non-filterable (TSS) | ☐ | | ____ | ____ |
| solvent ID | ☐ | | ____ | ____ |
| total Kjeldahl nitrogen (TKN) | ☐ | ____ | 150 | ____ |
| total organic carbon (TOC) | ☐ | ____ | 150 | ____ |
| total phosphorus (TP) | ☐ | ____ | 150 | ____ |
| total dissolved phosphorus (TDP) | ☐ | | 150 | ____ |
| total solids (TS) | ☐ | | 150 | ____ |
| total volatile solids (TVS) | ☐ | | ____ | ____ |
| turbidity | ☐ | | ____ | ____ |
| water content | ☐ | | ____ | ____ |

## Metals

| Analysis Request | | Sample Matrix and Number | | |
|---|---|---|---|---|
| **Analysis** | **Check to Request** | **soil/sediment** | **water/liquid** | **other/waste*** |
| chromium (VI) | ☐ | _____ | _____ | |
| dissolved metals** (except Hg & Cr (VI)) | ☐ | | _____ | _____ |
| hardness | ☐ | | _____ | _____ |
| mercury (Hg) | ☐ | _____ | _____ | |
| total metals** (except Hg & Cr (VI)) | ☐ | _____ | _____ | _____ wipe/filter |

## Organics

| Analysis Request | | Sample Matrix and Number | | |
|---|---|---|---|---|
| **Analysis** | **Check to Request** | **soil/sediment** | **water/liquid** | **other/waste*** |
| air toxics** | ☐ | | | _____ air |
| 1,4-dioxane, low level | ☐ | | _____ | _____ |
| oil & grease | ☐ | | _____ | _____ |
| polychlorinated biphenyls (PCB) congeners | ☐ | _____ | | _____ |
| perfluorinated compounds** (PFCs) | ☐ | _____ | _____ | _____ |
| pesticides, chlorinated** | ☐ | _____ | _____ | _____ |
| PCB aroclors** | ☐ | _____ | _____ | _____ |
| semi-volatiles** (SVOCs) | ☐ | _____ | _____ | _____ |
| total petroleum hydrocarbons (TPH as DRO/ORO) | ☐ | _____ | _____ | _____ |
| (tri-n-butyl)-n-tetradecylphosphonium chloride (TTPC) | ☐ | _____ | _____ | _____ |
| volatiles** (VOCs) | ☐ | _____ | _____ | _____ |

## Toxicity Characteristic Leaching Procedure (TCLP)

| Analysis Request | | Sample Matrix and Number | | |
|---|---|---|---|---|
| **Analysis** | **Check to Request** | **soil/sediment** | **water/liquid** | **other/waste*** |
| TCLP Hg | ☐ | _____ | _____ | _____ |
| TCLP metals | ☐ | _____ | _____ | _____ |
| TCLP pesticides | ☐ | _____ | _____ | _____ |
| TCLP SVOCs | ☐ | _____ | _____ | _____ |
| TCLP VOCs | ☐ | _____ | _____ | _____ |

## *Additional Matrix Description

Please describe *other/waste* matrix, if not specified above:

## **Specific Analyte Class/Subset Request

Please list or attach specific class/subset for multi-analyte test, if requested: Only Nitrate

## NON-STANDARD REQUESTS

For analyses/matrices not listed above or to obtain analyte lists, quality control limits, and/or reporting limits, please contact the CRL Sample Coordinator to discuss. (Thompson.robert@epa.gov, 312-353-9078)

## CRL DATA FORMAT

The CRL standard data deliverable includes: 1) a pdf of the work order 2) a pdf of the final Level II report and 3) an electronic data deliverable (EDD) that includes batch quality control sample data. EDD typically refers to an Excel spreadsheet of the data, but EDDs are available in a variety of formats and can be customized upon request. A full data package (Level IV) is also available upon request and will be transmitted electronically via the CRL SharePoint. Contact Sylvia Griffin, CRL Data Coordinator, for additional details. (Griffin.sylvia@epa.gov, 312-353-9073)

## CRL SAMPLE DISPOSAL POLICY

Due to space limitations in a controlled temperature environment, samples are relocated to secure room temperature storage six months after the analysis completion of the project. Notification of the intent to relocate the samples is given to the customer with sufficient time for the customer to respond with any objections. Samples remain in secure room temperature storage until the case/project is completed and the samples are no longer needed. Notification is given to the customer with sufficient time for customer response prior to sample disposal.

## CRL SAMPLE SHIPMENT REQUIREMENTS

Before collecting samples, please refer to the attached table for sample sizes, containers, and preservatives. Notify the CRL Sample Custodian (312.353.9083, Snyder.robert@epa.gov) and the CRL Sample Coordinator (312.353.9078, Thompson.robert@epa.gov) before shipping any samples and to arrange for sample receipt.

When packing samples for shipment:

- ✓ Seal individual samples in plastic bags, preferably Ziploc bags.
- ✓ The temperature of samples requiring refrigeration during transport MUST be maintained at or below 6°C.
- ✓ Ice in a sealed plastic bag or reusable ice substitute freeze packs are acceptable cooling media.
- ✓ Chain of custody forms MUST be sealed in a large Ziploc bag and taped to the inside of the cooler lid.
- ✓ Include the address to which the cooler should be returned.

After items are packed for shipment, secure the cooler with tape and attach a custody seal across the seam of the cooler lid.

All samples MUST be shipped overnight to arrive Monday thru Friday or hand-delivered. No deliveries are accepted on weekends or Federal holidays. Exceptions may be made on a case by case basis depending on sampling priority/emergency status.

Send all samples to:

**Robert Snyder**
**US EPA Region 5**
**Chicago Regional Laboratory**
**536 S. Clark Street, 10th Floor**
**Chicago, IL 60605**

# U.S. EPA CHICAGO REGIONAL LABORATORY
# HOLDING TIME AND CONTAINER REQUIREMENTS FOR WATER / AQUEOUS SAMPLES

**DISCLAIMER**: This table represents The Chicago Regional Laboratory's (CRL) recommended guidelines. Additional containers may be required for laboratory quality control samples (see notes section). There are non-routine analytes (reported upon request) that may require modification to the specifications detailed in this table. It is the client's responsibility to confirm container, preservation, and holding time requirements for a project prior to initiating sampling. This includes any equipment procurements, if applicable. No brand endorsements are made or implied.

| General Chemistry | CRL SOP(s) | Reference Method | Holding Time (days) | Min. Volume (mLs) | Container[e] | | Preservation |
|---|---|---|---|---|---|---|---|
| Acidity | AIG004A | SM 2310 | 14 | 50 | 500 mL Poly | | <6 C |
| Alkalinity | AIG005 | SM 2320 B | 14 | 50 | 500 mL Poly | | <6 C |
| Ammonia (Nitrogen, $NH_3$) Distilled | AIG029B | SM 4500-$NH_3$ B/H | 28 | 50 | 500 mL Poly | | pH<2, $H_2SO_4$, <6 C |
| Anions (Br, Cl, F, $NO_3$, $NO_2$, $PO_4$[a], $SO_4$) | AIG045A | EPA 300.0 | 2[b] or 28 | 10 | 250 mL Poly | | <6 C |
| Biochemical Oxygen Demand (BOD) 5-day | AIG006, A | SM 5210 B | 2 | 60 | 1 L Poly | | <6 C |
| BOD, Carbonaceous (cBOD) | AIG006, A | SM 5210 B | 2 | 60 | 1 L Poly | | <6 C |
| Corrosivity | AIG003 | EPA 9040C | 365 | 20 | 250 mL Amber | | <6 C |
| Cyanide, Amenable | AIG025A | SM 4500 $CN^-$ G | 14 | 50 | 500 mL Poly | | dechlorinate[c] NaOH, pH>10, <6 C |
| Cyanide, Total | AIG025C | EPA 335.4 | 14 | 50 | 500 mL Poly | | dechlorinate[c] NaOH, pH>10, <6C |
| Ignitability (Flashpoint) | AIG048A, B | EPA 1010A , 1020B | 365 | 100 | 250 mL Clear | | <6 C |
| Nitrogen, Nitrate+Nitrite | AIG031B | ASTM D7781-14 | 28 | 10 | 500 mL Poly | | pH<2, $H_2SO_4$, <6 C |
| Nitrogen, Total Kjeldahl (TKN) | AIG035B | EPA 351.2 | 28 | 10 | 500 mL Poly | | pH<2, $H_2SO_4$, <6 C |
| Organic Carbon, Dissolved (DOC) | AIG021D | EPA 5310B | 28 | 20 | 500 mL Poly | | field filtered[d] pH<2, $H_2SO_4$, <6 C |
| Organic Carbon, Total (TOC) | AIG021D | EPA 5310B | 28 | 20 | 500 mL Poly | | pH<2, $H_2SO_4$, <6 C |
| Paint Filter Liquid Test | AIG010 | EPA 9095B | 30 | 100 | 250 mL Amber | | <6 C |
| pH | AIG002 | SM 4500-$H^+$ B | 15 min | 50 | 250 mL Poly | | <6 C |
| Phosphorus, Total Dissolved (TDP) | AIG034B | EPA 365.4 | 28 | 10 | 500 mL Poly | | field filtered[d] pH<2, $H_2SO_4$, <6 C |
| Phosphorus, Total (TP) | AIG034B | EPA 365.4 | 28 | 10 | 500 mL Poly | | pH<2, $H_2SO_4$, <6 C |
| Solids, Total Dissolved (TDS) | AIG017 | SM 2540 C | 7 | 50 | 500 mL Poly | | <6 C |
| Solids, Total Suspended (TSS) | AIG018 | SM 2540 D | 7 | 100 | 500 mL Poly | | <6 C |
| Turbidity | AIG054 | EPA 180.1 | 2 | 30 | 250 mL Clear | | <6 C |
| Water Content | AIG015A | EPA 9000 | 365 | 10 | 250 mL Amber | | <6 C |
| **Metals** | **CRL SOP(s)** | **Reference Method** | **Holding Time (days)** | **Min. Volume (mLs)[l]** | **Container** | | **Preservation** |
| Chromium (VI) | AIG032A | EPA 218.6 | 28 | 50 | 250 mL Poly | | pH 9.3-9.7, <6 C $NaOH/(NH4)_2SO_4$ |
| Hardness | Metals026 | SM 2340 B | 180 | 50 | 500 mL Poly | | pH<2, $HNO_3$ |
| Mercury (Hg) | AIG044D, E | EPA 245.1/7470A | 28 | 20 | 500 mL Poly | | pH<2, $HNO_3$ |
| Metals, Total | Metals001, 003, 003A | EPA 200.7/200.8 EPA 6010D/6020B | 180 | 50 | 500 mL Poly | | pH<2, $HNO_3$ |
| Metals, Dissolved | Metals001, 003, 003A | EPA 200.7/200.8 EPA 6010D/6020B | 180 | 50 | 500 mL Poly | | field filtered[d] pH<2, $HNO_3$ |
| **Organics** | **CRL SOP(s)** | **Reference Method** | **Holding Time (days)** | **Min. Volume (mLs)** | **Container** | **MS/MSD[m]** | **Preservation** |
| 1,4-Dioxane (low-level) | MS035 | EPA 522/8000D | 28[g] | 250 | 2 - 250 mL Amber | 2 | pH<2, $NaHSO_4$, <6 C |
| Chlorothalonil | MS033 | EPA 525.3/8270D | 7[f] | 40 | 3 - 40 mL Amber VOA | 2 | <6 C |
| Oil and Grease | GC030, 32 | EPA 1664B | 28 | 1 L | 2 - 1L Clear wide-mouth | 2 | pH<2, $H_2SO_4$, <6 C |
| Polychlorinated Biphenyls (PCBs) | GC002, 003 | EPA 608/8082A | 7[f,k] or 365[f] | 1 L | 2 - 1L Amber | 2 | <6 C |
| PCB Congeners (oil only) | MS034 | NA | 365 | 1 gram | 4 oz. jar | 1 | <6 C |
| Perfluorinated Compounds (PFCs) | OM012 | NA | 28 | 10 | 2 - 15 mL Polypropylene tube (preweighed) | 4 | <6 C |
| Pesticides (low level) | OM019 | NA | 28[f] | 10 | 3 - 40 mL amber VOA | 2 | <6 C |
| Pesticides, Chlorinated | GC001 | EPA 608/8081B | 7[f] | 1 L | 2 - 1L Amber | 2 | <6 C |
| Petroleum Hydrocarbons (TPH as DRO/ORO) | GC034 | EPA 8015C | 7[f] | 1 L | 2 - 1L Amber | 2 | <6 C |
| Semi-Volatile Organic Compounds (SVOCs) | MS026, 27 | EPA 625/8270D | 7[f] | 1 L | 2 - 1L Amber | 2 | <6 C |
| Tetradecylphosphonium chloride (TTPC) | OM016 | NA | 30 | 10 | 3 - 40 mL Amber VOA | 2 | <6 C |
| Volatile Organic Compounds (VOCs) | MS023, 24 | EPA 624/8260C | 7 (unpreserved) 14 (Preserved) | 40 | 3 - 40mL VOA no headspace | 2 | pH<2, HCl, <6 C |
| **Waste Characterization** | **CRL SOP(s)** | **Reference Method** | **Holding Time (days)** | **Min. Volume (mLs)[l]** | **Container** | | **Preservation** |
| Toxicity Characteristic Leaching Procedure (TCLP)[h] | GEN019 | EPA 1311 | Varies[i] | Varies[J] | Varies | | <6 C |

**Notes:**

[a] Orthophosphate must be field filtered

[b] Nitrite, nitrate, and ortho-phosphate have a 48 hour holding time

[c] Dechlorinate with ascorbic acid

[d] Field filtering should use a 0.45 µm filter

[e] All containers must be filled completely and maintained on ice at ≤ 6 C

[f] 40 day holding time post extraction

[g] 28 day holding time post extraction

[h] Can be requested for metals, Hg, Pesticides, SVOCs and VOCs

[i] Field collection->TCLP ext. (in days): 14 for organics, 28 for Hg, 180 for metals

[J] Contact CRL for additional details and/or options

[k] Applicable to method 608 only

[l] Per sample. Does not include amount needed for QC samples or excess needed for dilutions/reanalysis

[m] Extra containers needed for MS/MSD location. Frequency = 1/20 field samples

# U.S. EPA CHICAGO REGIONAL LABORATORY
# HOLDING TIME AND CONTAINER REQUIREMENTS FOR SOIL / SOLID SAMPLES

**DISCLAIMER**: This table represents The Chicago Regional Laboratory's (CRL) recommended guidelines. Additional containers may be required for laboratory quality control samples (see notes section). There are non-routine analytes (reported upon request) that may require modification to the specifications detailed in this table. It is the client's responsibility to confirm container, preservation, and holding time requirements for a project prior to initiating sampling. This includes any equipment procurements, if applicable. No brand endorsements are made or implied.

| General Chemistry | CRL SOP(s) | Reference Method | Holding Time (days) | Min. Mass (g)[l] | Container[c] | Preservation[d] |
|---|---|---|---|---|---|---|
| Ammonia (Nitrogen, $NH_3$) | AIG029B, 22A | SM 4500-$NH_3$ B/H | 28 | 1 | 4 oz. jar | <6 C |
| Anions (Br, Cl, F, $NO_3$, $NO_2$, $P0_4$, $SO_4$) | AIG039, 45A | EPA 300.0 | 2[a,b] or 28[b] | 10 | 4 oz. jar | <6 C |
| Chemical Oxygen Demand (COD) | AIG007A, 22A | 410.4 | 28[b] | 10 | 4 oz. jar | <6 C |
| Cyanide, Total | AIG025B, C | EPA 335.4 | 14 | 1 | 4 oz. jar | <6 C |
| Nitrogen, Total Kjeldahl (TKN) | AIG022A, 35B | EPA 351.2 | 28[b] | 1 | 4 oz. jar | <6 C |
| Organic Carbon, Total (TOC) | AIG009A | ASA-SSSA | 28[b] | 1 | 4 oz. jar | <6 C |
| Particle Size | AIG038, 38A | ASTM D2487-93 | 365 | 100 | 16 oz. jar | <6 C |
| pH | AIG008 | EPA 9045D | 365 | 20 | 4 oz. jar | <6 C |
| Phosphorus, Total (TP) | AIG022A, 34B | EPA 365.4 | 28[b] | 1 | 4 oz. jar | <6 C |
| % Solids | AIG019 | SM 2540 G | 7 | 10 | 4 oz. jar | <6 C |
| **Metals** | **CRL SOP(s)** | **Reference Method** | **Holding Time (days)** | **Min. Mass (g)[l]** | **Container** | **Preservation** |
| Chromium (VI) | AIG033A | EPA 7199/3060A | 30 | 2.5 | 4 oz. jar | <6 C |
| Mercury (Hg) | AIG043C,D,E | EPA 245.5/7471B EPA 7473 | 28 | 1 | 4 oz. jar | <6 C |
| Metals, Total | Metals001, 003A, 004 | EPA 200.7/200.8 EPA 6010C,D/6020B | 180 | 100 | 4 oz. jar | <6 C |
| **Organics** | **CRL SOP(s)** | **Reference Method** | **Holding Time (days)** | **Min. Mass (g)[l]** | **Container** | **Preservation** |
| Pesticides, Chlorinated | GC001 | EPA 8081B | 14[m] | 10 | 8 oz. jar | <6 C |
| Polychlorinated Biphenyls (PCBs) | GC002, 003 | EPA 8082A | 365[m] | 10 | 8 oz. jar | <6 C |
| PCB Congeners | MS034 | NA | 365 | 30 | 8 oz. jar | <6 C |
| Perfluorinated Compounds (PFCs) | OM013 | NA | 28 | 2 | 50 mL Polypropylene Tube[k] | <6 C |
| Petroleum Hydrocarbons (TPH as DRO/ORO) | GC034 | EPA 8015C | 14[m] | 30 | 8 oz. jar | <6 C |
| Polycyclic Aromatic Hydrocarbons, Alkylated | MS026 | NA | 14[m] | 30 | 8 oz. jar | <6 C |
| Semi-Volatile Organic Compounds (SVOCs) | MS026 | EPA 8270D | 14[m] | 30 | 8 oz. jar | <6 C |
| Tetradecylphosphonium chloride (TTPC) | OM017 | NA | NA | 2 | 4 oz. jar | <6 C |
| Volatile Organic Compounds (VOCs) | MS001 | EPA 8260C | 2 | 5 | 3 Encores™[e] or 3 VOA vials w/ stir bar[e,f,J] | <6 C |
| **Waste Characterization** | **CRL SOP(s)** | **Reference Method** | **Holding Time (days)** | **Min. Mass (g)[l]** | **Container** | **Preservation** |
| Toxicity Characteristic Leaching Procedure (TCLP)[g] | GEN019 | EPA 1311 | Varies[h] | Varies[i] | 16 oz. jar | <6 C |

## HOLDING TIME AND CONTAINER REQUIREMENTS FOR FILTERS / WIPE SAMPLES

| Organics | CRL SOP(s) | Reference Method | Holding Time (days) | Num. of Wipes | Container | Preservation |
|---|---|---|---|---|---|---|
| Polychlorinated Biphenyls (PCBs) | GC002, 003 | EPA 8082A | 365[m] | 1 wipe w/hexane | 4 oz. jar | <6 C |
| Semi-Volatile Organic Compounds (SVOCs) | MS026 | EPA 8270D | 14[m] | 1 wipe w/ isopropanol | 4 oz. jar | <6 C |

## HOLDING TIME AND CONTAINER REQUIREMENTS FOR AIR / VAPOR SAMPLES

| Volatiles | CRL SOP(s) | Reference Method | Holding Time (days) | Pressure | Vessel | Preservation |
|---|---|---|---|---|---|---|
| Air Toxics | MS005 | TO-15 | 30 | approx. -7 "Hg | 2.7 L Summa[i] | Ambient |

**Notes:**

[a] Nitrite, nitrate, and ortho-phosphate have a 48 hour holding time

[b] Holding time after extraction

[c] All jars should be wide mouthed and have a Teflon lid

[d] All containers must be filled completely and maintained on ice at ≤ 6 C

[e] If no additional organics are requested, a 4 oz. jar must be submitted for % solids. For MS/MSD locations, 3 extra encores/VOA vials are need. Frequency = 1/20 field samples

[f] Dispensed in preweighed 40 mL VOA vials with stir bar.
Preferred over Encore™ or similar. No brands are endorsed by CRL.

[g] Can be requested for metals, Hg, Pesticides, SVOCs and VOCs

[h] Field collection->TCLP ext. (in days): 14 for organics, 28 for Hg, 180 for metals

[i] Contact CRL for additional details and/or options

[J] Collected w/ a 5 gram coring device (e.g. Terracore™ or similar)

[k] Must be preweighed

[l] Per sample. Does not include amount needed for QC samples or excess needed for dilutions/reanalysis

[m] 40 day holding time post extraction